



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
[www.uspto.gov](http://www.uspto.gov)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/770,706	01/26/2001	Nadim Abdo	MS158524.1	6799
27195	7590	11/19/2003	EXAMINER	
AMIN & TUROCY, LLP 24TH FLOOR, NATIONAL CITY CENTER 1900 EAST NINTH STREET CLEVELAND, OH 44114			WALLACE, SCOTT A	
		ART UNIT	PAPER NUMBER	
		2671	6	
DATE MAILED: 11/19/2003				

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	09/770,706	ABDO, NADIM	
	<b>Examiner</b>	<b>Art Unit</b>	
	Scott Wallace	2671	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 07 August 2003.
- 2a) This action is FINAL.                    2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-29 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 1-4,7,11,14-17,21-25,28 and 29 is/are rejected.
- 7) Claim(s) 5,6,8-10,12,13,18-20,26 and 27 is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. §§ 119 and 120

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) All b) Some \* c) None of:  
   1. Certified copies of the priority documents have been received.  
   2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
   3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 13) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.  
 a) The translation of the foreign language provisional application has been received.
- 14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

#### Attachment(s)

- |  |  |
|--|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                    | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ . |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)           | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ . | 6) <input type="checkbox"/> Other: _____                                     |

***Response to Arguments***

1. Applicant's arguments with respect to claims 1-29 have been considered but are moot in view of the new ground(s) of rejection.

***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 11, 15-17, 21-25, 29 are rejected under 35 U.S.C. 102(e) as being anticipated by Uchiyama et al., U.S. Patent No. 6,400,362.

4. As per claims 11, 22 and 29, Uchiyama et al discloses a system for rendering an image of an object having a curved surface (column 1 lines 14-21), comprising: a determiner that determines M number of attributes relating to rendering the image, M being an integer (column 1 lines 14-37, since the images are known the attributes need to be determined before the images can be rendered); a first processor (another processing, column 4 lines 54-67) that pre-computes N number of attributes relating to rendering the image, N being an integer less than or equal to M, and the N number of attributes being pre-computable (column 4 lines 54-67, since the data is read from another processing step or processed at the moment then the another processing step is like the data being pre-computable, N has to be less than or equal to M because only M number of attributes are need to render the image, either all are pre-computable or some but it can't be more); and a second processor that computes the M number of attributes (column 4 lines 20-67).

**Art Unit: 2671**

5. As per claims 15 and 23, it is well known to use the symmetrical nature of curves (like breaking up a sphere into quadrants) to use less computations because of this symmetry because these can be pre-computed.
6. As per claims 16 and 24, Uchiyama et al discloses the M number of attributes including one or more light sources (column 1 lines 20-30, illumination).
7. As per claims 17 and 25, Uchiyama discloses the M attributes including one or more viewing positions (fig 4).
8. As per claim 21, Uchiyama discloses a computer-readable medium having computer-executable instructions for performing the method (column 4 lines 20-30).

***Claim Rejections - 35 USC § 103***

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:
  - (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.
10. Claims 1-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Uchiyama et al.
11. As per claim 1, Uchiyama et al discloses a system for rendering an image of an object having a curved surface (column 1 lines 14-21), comprising: a determiner that determines M number of attributes relating to rendering the image, M being an integer (column 1 lines 14-37, since the images are known the attributes need to be determined before the images can be rendered); a first processor (another processing, column 4 lines 54-67) that pre-computes N number of attributes relating to rendering the image, N being an integer less than or equal to M, and the N number of attributes being pre-computable

(column 4 lines 54-67, since the data is read from another processing step or processed at the moment then the another processing step is like the data being pre-computable, N has to be less than or equal to M because only M number of attributes are need to render the image, either all are pre-computable or some but it can't be more). However, Uchiyama does not teach a second processor that computes the M number of attributes. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have multiple processors doing different parts of the workload because this would increase the speed of the computations.

12. As per claims 2, it is well known to use the symmetrical nature of curves (like breaking up a sphere into quadrants) to use less computations because of this symmetry because these can be pre-computed.

13. As per claims 3, Uchiyama et al discloses the M number of attributes including one or more light sources (column 1 lines 20-30, illumination).

14. As per claims 4, Uchiyama discloses the M attributes including one or more viewing positions (fig 4).

15. Claims 7, 14 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Uchiyama et al in view of Dilliplane et al., U.S. Patent No. 6,097,400.

16. As per claims 7, 14 and 28, Uchiyama et al does not disclose wherein the first processor pre-computes an edge buffer for one or more objects. This is disclosed in Dilliplane et al in column 3 lines 48-67. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use an edge buffer because this would maintain a frames worth of edge information with minimal additional computational overhead.

***Allowable Subject Matter***

17. Claims 5-6, 8-10, 12-13, 18-20, 26-27 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Scott Wallace** whose telephone number is **703-605-5163**.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **Mark Zimmerman**, can be reached at 703-305-9798.

**Any response to this action should be mailed to:**

Commissioner of Patents and Trademarks  
Washington, D.C. 20231

**or faxed to:**

**(703) 872-9314 (for Technology Center 2600 only)**

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.



MARK ZIMMERMAN  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2600